11/21

IN THE UNITED STATES DISTRICT COURT FOR THE

SOUTHERN DISTRICT OF NEW YORK

MIDWAY MANUFACTURING COMPANY: Deposition of

vs. : Ralph Baer

THE MAGNAVOX COMPANY :

and

SANDERS ASSOCIATES, INC. :

- - - - - - - - - - - - - - - - -

IN THE UNITED STATES DISTRICT COURT FOR THE

NORTHERN DISTRICT OF ILLINOIS, EASTERN DIVISION

THE MAGNAVOX COMPANY, et al :

vs. :

BALLY MANUFACTURING :
CORPORATION , et al

- - - - - - - - - - - - - - - - - :

IN THE UNITED STATES DISTRICT COURT FOR THE

NORTHERN DISTRICT OF CALIFORNIA

ATARI, INC. :

vs. :

THE MAGNAVOX COMPANY :

and :

SANDERS ASSOCIATES, INC. :

- - - - - - - - - - - - - - - - -

ERNEST W. NOLIN & ASSOCIATES
General Stenographic Reporters
369 ELGIN AVE., MANCHESTER, N. H. 03104
TELEPHONE: 623-6906

ORIGINAL

Deposition taken pursuant to subpoena and notice at the Sanders Associates, Inc.; Headquarters, Spit Brook Road; Nashua, New Hampshire; Friday, November 21, 1975; commencing at four-fifteen in the afternoon.

PRESENT:

For Midway Manufacturing Company, Bally Manufacturing Corporation and Empire:

Donald L. Welsh, Esq., and A. Sidney Katz, Esq., 135 South LaSalle Street, Chicago, Illinois.

For Atari, Inc.:

Thomas O. Herbert, Esq., 160 Sansome Street, 15th Floor, San Francisco, California.

For Sanders Associates, Inc., and Magnavox Company:

Theodore W. Anderson, Esq., and James T. Williams, Esq., 77 West Washington Street, Chicago, Illinois.

For Sanders Associates:

Louis Etlinger, Esq., and Richard I. Seligman, Esq., Daniel Webster Highway, South, Nashua, New Hampshire

For the Magnavox Company:

Thomas A. Briody, 1700 Magnavox Way, Fort Wayne, Indiana

Stenotype Reporter:

Ronald J. Hayward

RALPH BAER

called as a witness, being first duly sworn, was examined and testified as follows:

(Interrogatories by Mr. Welsh.)

Q. Would you state your name for the record, please?

A. Ralph Baer.

Q. Do you have a middle initial?

A. H.

Q. Where do you live, Mr. Baer?

A. At 134 Mayflower Drive, Manchester, New Hampshire.

Q. Are you employed?

A. Yes.

Q. By whom?

A. Sanders Associates.

Q. In what capacity are you employed?

A. I am a staff engineer in the research and development office.

Q. Do you have any title?

A. No, just member of the technical staff.

Q. Do you have a formal education?

A. Yes, I do.

Q. What is that?

A. I have a B.S. in TV engineering.

Q. When did you obtain that?

A. 1949.

Q. From what institution?

A. American Television Institute of Technology in Chicago.

Q. How long a course did you pursue there?

A. A standard four-year course of which I took three and a half, I skipped half a year.

Q. Were you employed during the time that you were there?

A. Yes.

Q. As what?

A. As a part-time employee of the labs connected with the school.

Q. And what did you do as an employee of the labs?

A. We built breadboard hardware for teaching purposes.

Q. Is that institute connected with any other institution?

A. No, it isn't.

Q. Do you know if it still exists?

A. I don't believe it does.

Q. Do you know when it ceased to exist?

A. No, I don't.

Q. What courses did you pursue while you were there?

A. Math, radio engineering. Every engineering school was a la Terman. All engineering was taught the same way twenty-five years ago. Physics, chemistry, English, whatever.

Q. I presume you also took some courses in television?

A. Yes. Well, that was part of the curriculum, correct.

Q. When in 1949 did you graduate?

A. I don't really recall. It must have been in the summertime.

Q. What, if anything, did you do immediately upon graduation?

A. I got a job.

Q. Where did you get a job?

A. At Wappler, Incorporated, New York City.

Q. What was the business of Wappler, Incorporated?

A. Design, development, manufacture, fabrication of

electromedical equipment.

Q. What position did you start with there?

A. I was the chief and only engineer.

Q. How large a company was that?

A. The company consisted of four people.

Q. Did you have anyone working under you?

A. No, not at the time.

Q. How long did you hold that job?

A. A year and a half.

Q. Did you own any part of that company?

A. No.

Q. What did you do in your position of chief engineer during that year and a half?

A. I designed, developed, built, fabricated electromedical equipment.

Q. Could you be a little more specific as to what electromedical equipment you worked on?

A. Physio(therapy)equipment, surgical diathermy equipment, depilation equipment - hair-removing equipment in plain English.

Q. Was that equipment mechanical?

A. No, electronic in nature.

Q. Electronic in nature?

A. Yes.

34 Q. After the year and a half while you were chief engineer of Wappler, Incorporated, what did you do?

A. I took a job at Loral Electronics in New York as an engineer.

35 Q. What was the business of Loral Electronics?

A. Primarily electronics equipment.

36 Q. Could you be more specific?

A. Loral at that time and at the present, designs, develops and manufactures equipment for the Navy and other services. Largely countermeasures equipment, much like Sanders Associates.

37 Q. How large a company was Loral at the time when you went to work for it?

A. Roughly 200 people.

38 Q. Did you have a title other than engineer?

A. I don't think so.

39 Q. How long did you hold that position as engineer?

A. Two years.

40 Q. And what did you do during that two years in your job as engineer?

A. I built a ground position indicator for a radar *

system; I built some commercial equipment for IBM; I spent a half year in the screen room building the beginnings of a projection TV set.

41 Q. Was that a military project?

A. No, that was a nonmilitary project.

42 Q. Anything else?

A. That is enough in two years.

43 Q. What was the commercial equipment that you built for IBM?

A. It was a piece of tone paging equipment which at least in those days IBM used to synchronize clocks throughout a plant.

44 Q. How long did you work on that project?

A. Four to six months.

45 Q. And how long did you work on the ground position indicator for the radar system?

A. Approximately a year.

46 Q. What is a screen room that you describe in connection with your projection TV set?

A. A screen room is an exclosure which prevents radio interference from the outside from interfering with your activities and prevents emanation of radiation you might be generating

with your equipment fromgetting into the rest of the plant.

47 Q. Sort of a shielded room?

A. A shielded enclosure, right.

48 Q. Could you be a little more specific as to what the ground position indicator you worked on for a year consisted of?

A. Well, the portion I worked on involved taking outputs from such devices as air speed indicators, manually entered wind speeds, resolving a compass output and computing such things as air speeds and wind speeds of aircraft to ground speed. The ground speed was then used to slave the ~~deflexion~~ deflection circuit of a ground position indicator ~~of~~ such as to maintain a constant map of the territory overflown by the aircraft in which this equipment was located, on the screen.

49 Q. You used the term screen, a screen of what?

A. A cathode ray tube screen. A PPI screen, a ~~planned~~-position indicator screen.

50 Q. How did you happen to leave that job with the ground position indicator to go to something else; did you complete the project?

A. I don't understand the question. Do you mean, Did I leave Loral?

51 Q. No, I understand that you worked on that project for a year, was the project completed?

A. That was the last project at Loral which I completed, after which I joined the chief engineer who left Loral and started a new company and employed me as his chief engineer.

52 Q. I had intended to ask when during the two-year period you worked on these projects, and you partially answered that.

A. The sequence was the TV set first, the IBM equipment second, the ground position indicator third.

53 Q. What did Loral or the chief engineer who left Loral start?

A. Transitron, Incorporated, in New York.

54 Q. Is that company still in existence?

A. No.

55 Q. How long did you work for it?

A. Four to four and a half years, I don't really know.

56Q Q. Four to four and a half years?

A. Yes.

57 Q. I know you have given us some time periods here which might be added up - - -

A. They may add up more than my actual time.

58 Q. I just wondered if you recalled the month and year, perhaps, or time of the year when you left Loral and went to work with Transitron?

A. I am afraid not, no, I can't tell you exactly.

59 Q. You worked for Transitron for four to four and a half years and you said Transitron is no longer in existence, when did it cease to exist?

A. Well, Transitron ceased to exist roughly seventeen years ago.

60 Q. Were you working for it up until the time it ceased to exist?

A. No, I left within a half year or so of its demise and came ~~with~~ to Sanders. *

61 Q. And do you recall when that was exactly?

A. August 1, seventeen years ago.

62 Q. That would be August 1, 1958?

A. Yes.

63 Q. Did you remain in the position of chief engineer of Transitron during the four or four and a half

years you worked there?

A. No, I became vice-president for engineering in the last two years.

64 Q. As chief engineer during your first years of employment at Transitron, what did you do?

A. We built, manufactured in quantity, test equipment for the Navy and the Army.

65 Q. Did you also design such equipment?

A. Yes.

66 Q. What was the equipment designed to test?

A. We designed and developed a sweep signal generator and other instrumentation, a digital volt meter, a line of amateur radio equipment.

67 Q. What did you, as chief engineer, have to do specifically with these various products?

A. I ran the engineering group. I was responsible for all engineering and preproduction functions. Product development, quality control.

68 Q. How many people were in the engineering group?

MR. ANDERSON: I object, at what time?

69 Q. I was going on, about the time when you first started.

A. In the order of ten, fifteen people and later thirty to thirty-five.

70 Q. Approximately how much later?

A. Two years later.

71 Q. That was when you became vice-president of engineering?

A. Yes.

72 Q. How did Transitron happen to go out of existence?

A. Transitron was a subsidiary of VanNorman Industries. VanNorman Industries was a holding company. Several of their divisions were losing money and we weren't. As a result, the holding company folded and all its subsidiaries disappeared with the exception of VanNorman Machine, that still exists today.

73 Q. Did any of the equipment designed by Transitron while you were chief engineer or vice-president of engineering have any cathode ray tubes or television tubes?

A. The sweep signal generator had a built-in oscilloscope, that is it.

74 Q. During your last two years when you were vice-president of engineering, what did you do at Transitron?

A. Ran the engineering group, quality control, I was responsible for product development, preproduction design for the whole series of military programs which we had at the time and the development of a line of radio communication equipment, commercial.

75 Q. Your duties sound about the same generally as they were when you were chief engineer, is that correct?

A. That is correct.

76Q Q. But the size of the department or your group grew?

A. The company grew substantially.

77 Q. About how large was the company in the last year before it ceased to exist?

A. It was running at the four or $5 million a year level.

78 Q. About how many employees?

A. 200.

79 Q. When you first became employed by Sanders, what position did you hold?

A. For six months I was just a staff engineer, after that I became department manager of the electronic design department.

80 Q. As staff engineer in your first six months, were you assigned to any particular department?

A. Yes, actually to a division, the equipment design division as staff to the division manager.

81 Q. How many engineers were there in that division at that time?

A. Well, in excess of a hundred.

82 Q. What were your duties during that time?

A. I was primarily charged with coordination between mechanical and electronic engineering departments.

83 Q. Were those departments within the equipment design division?

A. That is correct.

84 Q. Were there other departments within the equipment design division?

A. Yes, there was quite a number.

85 Q. What were they?

A. The microwave department, a model shop activity, a printed circuit shop activity, drafting, a design group, that is it. *

86 Q. Do you recall approximately how many people were in that division at that time?

A. In the order of 200.

87 Q. Do you recall how many employees Sanders had as a total about that time?

A. A thousand, twelve hundred.

88 Q. Were you located at a particular facility of Sanders at that time?

A. Yes, the Canal Street facility in Nashua.

89 Q. Now, did your work during that six months involve any particular products?

A. Military products.

90 Q. What products?

A. Large components of countermeasures equipment.

91 Q. What components?

A. By components, I mean subsystems, circuit subsystems.

92 Q. Electronic?

A. Yes, electronic.

93 Q. What does countermeasures mean?

A. By Countermeasures is meant in this case equipment which has the function of responding to and confusing unfriendly equipment. *

94 Q. What particular countermeasures equipment were you involved with at that time?

A. I would say the ALQ 19, ALQ 51, many others whose nomenclature escapes me now fifteen years later.

95 Q. What was the ALQ 19?

A. Military countermeasures equipment specifically designed to spoof enemy radar.

MR. ANDERSON: Mr. Baer, I might caution you if any of this is classified - - -

THE WITNESS: No, you can read all of this in Aviation Week.

96 Q. Could you describe some of the types of countermeasures equipment? I know that you havegiven a general description.

A. Generically they all consist of methods for receiving unfriendly radiation which might be painting your aircraft at the moment and digesting this radiation and reradiating information that is designed to confuse the enemy ground or airborne equipment.

97 Q. Did such countermeasures equipment include any visual display devices?

A. No.

98 Q. How did the ALQ 19 differ from the ALQ 51?

A. Most countermeasures sets differ from one another by virtue of the frequency band of the threat which they are designed to handle; and, as the years go on, they vary in other details because the *

threat changes from year to year.

MR. WELSH: Off the record.

(Discussion off the record.)

(Whereupon, the deposition in the above-entitled action was adjourned until Monday morning, November 24, 1975, at 10 a.m.)

Ralph H Ide
Deponent

THE STATE OF NEW HAMPSHIRE)
)SS.
COUNTY OF Hillsborough)

Subscribed and sworn to before me this 10th day of May 19 76.

Marilyn E. Tsapalis
~~Justice of the Peace and/or~~
Notary Public